



Evoked Potentials (EP)

You are scheduled for an evoked potentials (EP) test. EP measures how certain parts of the brain respond to electrical stimulus. The brain makes wave forms that can be measured. EP studies the wave forms made by parts of the brain controlling visual (sight), auditory (hearing), and somatosensory nerves (nerves outside the brain and spinal cord, also called peripheral). These wave forms establish a diagnosis.

EP is similar to EEG in that electrodes will be placed on your scalp to record brain waves. For EP, however, electrodes will be placed only over areas of the brain that control visual, auditory, and somatosensory nerves. Other electrodes may be placed on your body to track the signal as it travels to the brain.

It may be necessary to sedate a patient if he or she is unable to cooperate during the procedure. Patients will be fully informed if sedation is needed.

Preparation:

- You may wash your hair if you so desire, but do not use hair spray or oily scalp products 24 hours before the test. If possible, eat a meal or light snack within 4 hours of your EEG. Avoid caffeinated drinks.
- The hearing and somatosensory EP tests are easily done when you are relaxed and drowsy. This is why your doctor may ask you to stay awake for all or part of the night before this type of EP.
- You must be fully alert and attentive for the visual EP. If you are scheduled for a visual EP, try to get plenty of rest the night before.
- You will be asked to go to the EEG laboratory at a specific time. Once there, you may be asked to wait before the test begins. Please be patient until you are called.

Procedure:

- The technician will either measure your scalp and mark the spots where small discs will be placed, or fit you with a special cap containing these discs. For the somatosensory EP, other discs may be placed on your neck, shoulders, back, and legs to track signals to the brain.
- The sites will be rubbed with a mild, scratchy cleanser that may cause mild discomfort for a short while.
- The discs will be attached to your body with a cream or gel. The technician may secure the discs to your skin with an adhesive.
- You will lie on a bed or in a comfortable chair so that a relaxed recording can be done.
- During the visual EP, you will look at a checkerboard pattern on a television screen. During the auditory EP, you will hear clicking noises, which the technician will send through headphones you will wear throughout the test. The somatosensory EP is done by stimulating a nerve with a mild, harmless electric pulse. Each eye, ear, or nerve will be tested separately.
- From time to time, the technician may ask you to open and close your eyes and to do a breathing exercise. A light may be flashed over your eyes.
- The EP lasts 1 to 2 hours.

Risks

Looking at the checkerboard pattern during the visual EP carries a very small risk of provoking a seizure. This EP will be stopped immediately if the technician sees any hint of a seizure.

The auditory EP has no risks.

During the somatosensory EP, you will feel tingling in the area being stimulated. The amount of electrical current used is very small and does not cause problems.

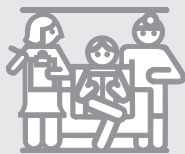
**After the
Procedure:**

The technician will remove the gel with water. The adhesive will be removed with a special cleanser. Shampooing will rid your hair of any other material.

Some patients are mildly sensitive to the gel or cream, or get irritation from the rubbing of the scalp. There are no other side effects or precautions needed after the test.

If you have questions about the procedure, please ask. Your nurse and doctor are ready to assist you at all times.

**Special
Instructions:**



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Questions about the Clinical Center? OCCC@cc.nih.gov

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